Development of a Diagnostic Tool for the SEEA Central Framework

Section 1: Monitoring and preparing for SEEA implementation
Draft, February 15, 2013

1 Introduction

Using statistical evidence to support national sustainability goals is an important objective of governance. However, providing that evidence in a way that is suitable, transparent and cost-effective is not a simple undertaking. In response to this need, the international community has produced the System of Environmental-Economic Accounting (SEEA). This is a coherent and integrated measurement framework for organizing environmental data and applying it to sustainability and green economy decision-making. Countries have different priorities. Their governments organize themselves and their statistical systems in different ways. Their capacities to produce and use statistical evidence vary. Therefore, implementing this framework requires a flexible and modular approach.

Concept note

Decisions are made on more input than scientific and statistical evidence alone. Decision makers must integrate a complex of values including cultural values and political support. They must also consider the economic, legal, diplomatic and social implications of their decisions. Integrating environmental accounts into decision making will ensure that the development of statistical evidence is driven by demand.

The objectives of development initiatives are often measured in terms of their short-term contribution to GDP. This important but solitary indicator does not take into account whether the initiatives are drawing down national wealth by depleting natural resources, damaging the health of the population or restricting their access to vital resources such as water and energy. Therefore, even if initiatives contribute to GDP, they may not be sustainable. Since SEEA integrates economic and environmental data (and can be connected with various social indicators) it provides a broader accounting framework to understand the longer-term contribution of development initiatives.

A snapshot of the most common words in 2,573 responses to UNCSD request for input to Rio+20.

1.1 Purpose and outline of the Diagnostic Tool

This **Diagnostic Tool** is the first stage of an overall **Implementation Strategy** for the SEEA Central Framework (SEEA-CF). It is designed so that it can guide all countries in improving their environmental information. It is directed not only at the statistical community but also as much at those involved in policy formulation and analysis. Raising awareness outside the statistical community is an important step in building cooperation across government and non-governmental agencies, and between decision makers and experts.

Through national collaboration and the support of international agencies, this new international statistical standard for environmental-economic accounts will be a major factor in supporting sustainable development and green economy policies.

The **Diagnostic Tool** contains three main sections within which are described the seven steps to implementation:

1. **Section 1. Monitoring and preparing for SEEA implementation.** This is a general introduction to SEEA and the overall **SEEA Implantation Strategy**.
    a. **Step 1:** Establish a core group that will conduct an initial assessment.
2. **Section 2. Preparing a strategic plan.** This guides countries to better understanding their policy priorities, the processes their government uses to decide on policy priorities, and the capacity of national institutions to develop environmental accounts.
    b. **Step 2:** Reviewing the current framework for sustainable development and green economy information.
    c. **Step 3:** Developing a Statement of Strategy that describes the objectives and key activities required for implementation.
    d. Step 4: Conducting an initial National Assessment with information about policy priorities, stakeholders and data quality. Select a small set of feasible and priority accounts.
    e. Step 5: Drafting a preliminary National Implementation Plan that identifies the main activities required to produce and release the selected accounts.
    f. Step 6: Establishing a National Implementation Team using information developed to engage a broader group of stakeholders.
3. **Section 3. Data assessment.** This is a detailed diagnostic for selected SEEA accounts. It specifies the questions that countries need to ask to determine whether data availability, data quality and institutional capacity are adequate to produce the account.
    g. **Step 7:** Conducting a detailed National Assessment and producing a final National Implementation Plan.

Further components of the Implementation Strategy will provide guidance on adapting institutions and applying those adaptations.

1.2 Purpose of Section 1

This section, **Monitoring and Preparing for SEEA Implementation**, provides a general overview of environmental accounting, the basis for SEEA. It will briefly describe how SEEA has been used and can be used to support national policies. The section will also describe the steps recommended for countries to assess which SEEA accounts have already been implemented and to prepare for further implementation.

2 Environmental accounting: what is it and why is it important?

Sustainability is inherently a concept that integrates economy, environment and society. SEEA provides a coherent and integrated framework for collecting, organizing, analysing, and presenting environmental data and relating it to economic and social data. It adheres to the principles of the System of National Accounts (SNA), and expands its scope by:

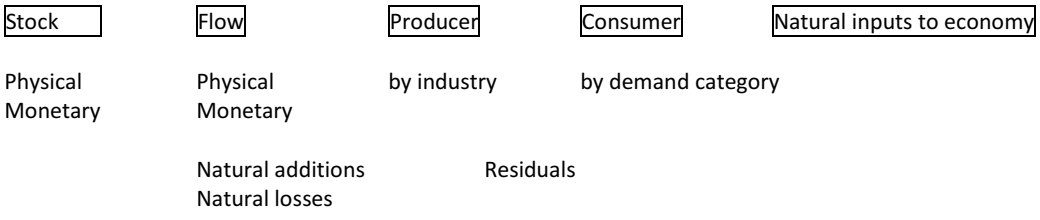
- providing standard terminology, definitions and classifications for environment-economy statistics,
- including measures of the physical stocks of natural capital and their values,
- adding physical measures of flows of natural inputs and residuals (e.g. minerals, timber, energy, water, fish, air emissions, water emissions, solid waste), and
- linking these to economic activities (producers and consumers)

2.1 Coherent and integrated framework

The accounting approach can bring coherence and consistency across previously disparate sets of statistics. Environment statistics are often developed to address specific issues. For example, a policy to increase the contribution of the mining sector to the economy may be monitored by statistics showing the value of the minerals extracted. A "big picture" perspective on the long-term benefits and costs of this policy would include statistics on the stocks of the resource being exploited, the cost of extraction and the residuals created.

Source data on stocks may have different statistical properties from data on their extraction. These data may have been collected using different classifications, for different periods or with incomparable units. With some effort, all these data can be brought into a single accounting framework. This can be done by changing the way the data are collected or by adjusting the data. By doing so, the stocks of non-renewable resources can be compared with the extraction of those resources so that assessments can be made of the expected lifetime and impacts.

Figure 1. SEEA flow of information (Need a simple diagram here to show integration across components)



By combining estimates of resource stocks with data on extraction and consumption, linking consumption rates with specific industries and with their production of residuals (Figure 1), this:

- provides a "big picture" perspective,
- identifies missing information, and
- allows for the creation of new analyses and indicators, such as:
    - the total monetary wealth of mineral stocks;
    - the greenhouse gas intensity of economic activities;
    - pollutant intensity by demand categories such as households and exports.

2.2 Framework helps identify data gaps and improve consistency

Any account will have a large number of data elements that will need to be combined. Each of these data elements will need to be available, accessible and coherent to produce a final account. The SEEA-CF and its sub-systems provide consistent terminology, definitions and classifications across all accounts to accomplish this.

2.3 Flexible and modular Implementation Strategy

The **SEEA Implementation Strategy** helps identify policy priorities, institutional capacity and data availability by guiding national experts in making assessments on each of these areas. Ensuring that important national stakeholders are engaged in the development of a **National Implementation Plan**, helps establish targets for institutional adaptations necessary to apply environmental accounting successfully. This will be a multi-year process to improve environmental institutional capacity, statistics and decisions.

3 Policy applications of environmental accounting and the role of SEEA

Sustainable development policy integrates national economic, environmental and social goals. While the SEEA-CF focuses mainly on the environment-economy interface, it is also relevant to issues relating to environment-society. The relevant issues can be divided into four quadrants:

1. *Improving access to services and resources* refers to policies that aim to ensure that households have access to appropriate, reliable and affordable resources (clean water, energy, food, land, materials, waste treatment, etc.).
2. *Managing supply and demand* addresses the allocation of endowments of natural resources to meet the needs of current and future generations.
3. *Improving the state of the environment and reducing impacts* recognizes that economic activities may harm the environment and includes activities related to protecting and restoring natural capital for future generations.
4. *Mitigating risks and adapting to extreme events* refers to policies that aim to reduce harm to humans, ecosystems and the economy caused by extreme natural events and changing environmental patterns.

Section 2 lists sample policy issues in more detail and uses this list to assess national sustainable development and green economy policy priorities.

4 SEEA principles and components

4.1 Context

The SEEA-CF was adopted as an international statistical standard by the Statistical Commission of the United Nations (UNSC) at its 43rd session in 2012. Like the System of National Accounts, countries are encouraged to adopt the standard and allocate resources to doing so. International agencies and other donors were requested to make resources available for technical assistance for the implementation of the framework and the development of basic economic and environmental statistics in all countries but particularly in developing countries.

SEEA responds to from the critical Agenda 21 lesson that integrating sustainability into economic decision-making is vital for countries to meet their sustainable development goals. Integrated decision-making requires integrated statistical evidence. Also in 2012, the United Nations Conference on

Sustainable Development (Rio+20) stressed the need to strengthen sustainable development monitoring by improving data collection and establishing related indicators. Since data collection often involves many different agencies with different mandates, there is a need for collaboration in the collection, management and sharing of data across institutions.

Since agencies such as the World Bank, Organisation for Economic Cooperation and Development (OECD), European Commission (EC; through its statistical office Eurostat), Food and Agricultural Organization (FAO), International Monetary Fund (IMF) were major participants in the SEEA creation, the framework is consistent with their objectives in measuring environment-economy linkages. Some of the related programs include:

- **World Bank WAVES (Wealth Accounting and the Valuation of Ecosystem Services):** This is a partnership initiated to support countries with the move to natural capital accounting. Natural capital accounting can help measure and manage the full extent of a country's natural assets. The SEEA provides the methodology for natural capital accounting at the national level.
- **OECD Green Growth Strategy:** The strategy aims to help countries encourage economic growth and development while ensuring that natural assets continue to provide the resources and services upon which our well-being relies. The OECD advocates that indicators for green growth should, where possible, be derived directly from the SEEA framework.
- **European Commission Beyond GDP:** Beyond GDP calls for the increased use of environmental and social indicators in relation to economic indicators such as GDP (Gross Domestic Product).
- **EU Strategy for Environmental Accounting:** This strategy calls for the extension of the core system of national income accounting by integrating stock and flow concepts and non-market work. This can be further elaborated by satellite accounts such as environmental expenditures and material flows. The first EU regulation on environmental accounting requires all Member States to compile annual data for air emissions accounts, environmental related taxes by industry and economy-wide material flow accounts.

Country experiences with environmental accounting

	Account type			
Country/Region	**Flows**	**Monetary**	**Assets**	**Sequence**
Australia	X	X	X	X
Botswana			X	
Brazil			X	
Canada	X	X	X	
China	X			X
Colombia		X	X	
India	X		X	X
Indonesia	X		X	X
Japan	X	X	X	X
Jordan	X		X	
Mexico	X		X	X
Namibia			X	
New Zealand	X	X	X	
Philippines	X		X	X
Korea			X	
South Africa	X		X	
USA	X	X	X	
EU (7 countries)	X	X	X	X

Source: Edens *et al.* (2011)

The most widely implemented accounts are flows for energy, air emissions and water. Asset accounts focus on minerals, oil and gas, forests and land. Developing countries like Mexico, Columbia, the Philippines and South Africa are compiling accounts ranging from energy and water to how minerals and timber contribute to national economic growth. Uptake in Europe is strongly influenced by EU regulations mandating certain accounts.

An increasing number of countries are compiling or planning to compile environmental accounts. These 24 countries include both developed and developing regions and represent all continents. The table lists countries and the accounts they are implementing.

4.2 Principles

The SEEA-CF and its sub-systems have developed incrementally over the past 20 years. The most recent revision of the SEEA-CF is the result of a wide, transparent consultation process led by the UN Committee of Experts in Environmental-Economic Accounting (UNCEEA), an intergovernmental body under the sponsorship of the UNSC.

SEEA provides the framework for measuring the environment and its interrelationship with humanity. It applies accounting rules to environmental information, thus enabling consistency with other international macroeconomic and environment-related international statistical standards and recommendations such as the System of National Accounts (SNA), the International Recommendations for Water Statistics (IRWS) and the International Recommendations for Energy Statistics (IRES).

4.2.1 Accounting rules

Compiling and contrasting monetary and physical data in meaningful ways is at the heart of the SEEA philosophy. Recording accounting entries requires applying a consistent set of accounting rules and principles to the physical and monetary asset accounts and flow accounts for pollution, energy and materials. Without these rules, related transactions and flows may be recorded on different accounting bases, at different times and with different valuation assumptions. SEEA principles enable accounting and reconciliation to render the information far more useful. These rules include:

- **Double and quadruple entry accounting**: allowing the identification of errors and reconciliation of transactions and other flows,
- **Time of recording**: ensuring that transactions and other flows refer to the same time period, and
- **Unit of measurement**: using consistent units (physical or monetary) enables aggregation and reconciliation.

The SEEA Central Framework is also based on consistent valuation rules such as:

- **Valuation at market prices**: the amount of money that willing buyers pay to acquire something from willing sellers is distinguished from "average" prices, and
- **Basic, producer and purchaser's prices**: the amount the producer ultimately receives is distinguished from the amount the purchaser pays. These are distinct due to the inclusion of taxes, transports and wholesale and retail margins in the purchaser price.

A consistent approach to **volume measures** is also embedded in the accounting structure. Changes in the values of goods and services result from changes in price and changes in quantity and quality of the goods. This is generally taken into account by removing the effect of price change from a time-series of transactions, income flows or asset values.

4.2.2 Concepts, definitions and classifications

The SEEA provides a consistent and rigorous set of concepts, definitions and classifications across all accounts and across all components. The primary concept is the consistent measurement of stocks and flows of natural assets in physical and monetary terms. These measures are laid out in standard

accounting structures for asset, supply and use tables and these tables are connected in a sequence of accounts.

Definitions and classifications are provided for, among others, natural resource inputs into the economy, residuals (pollutants and wastes), environmental economic activities, environmental technologies, environmental goods and services, environmental assets, mineral and energy resources, land uses, land cover, aquatic resources, and inland water bodies. These were developed in collaboration with experts in these areas. Together, these standards ensure that the underlying statistics can be combined into accounts, that the accounts can be connected together and that the SEEA components can be linked together.

4.3 Components

The SEEA-CF guides the physical measurement and monetary valuation of renewable and non-renewable natural resources and land. The SEEA subsystems provide guidance on valuation methods for these assets and related flows that are not within the SNA. The SEEA-CF presents the accounting structure; physical flow accounts; functional accounts, such as environmental protection expenditure accounts; asset accounts for natural resources; and the integration of physical and monetary accounts, and stocks and flow accounts into a sequence of accounts.

The SEEA-CF is supported by publications on the sub-systems that further elaborate the conceptual framework for specific resources or specific sectors. These include **SEEA-Water** (SEEA-W), **SEEA-Energy** (SEEA-E) and **SEEA Fisheries**. These are both supported by international recommendations (IRWS and IRES) that provide guidance on the data items, data sources and methods to develop the basic statistics that, among other applications, can be used for populating the accounting tables in the SEEA-CF.

The SEEA Experimental Ecosystem Accounting (SEEA-EEA) provide the measurement framework for ecosystem assets and the services they provide to humanity, expanding the scope of environmental accounting beyond the SNA. The framework is still under development in consultation with the European Environmental Agency (EEA) and the World Bank WAVES global partnership as well as national experts in ecosystem science and ecological economics.

The material in **SEEA Applications and Extensions** highlights the potential of data within the SEEA-CF. It bridges the perspectives of analysts/researchers and compilers. The document covers:

- Applications of data from SEEA accounts to topics such as sustainable resource use; environmental efficiency; production, employment and expenditure on environmental activities; environmental taxes and subsidies; income and depletion for environmental assets;
- Analytical techniques related to environmental-economic analysis, in particular the use of environmentally extended input-output tables; and
- Extensions to the data from SEEA accounts to integrate with, for example detailed household sector information and information on tourism activity.

5 Steps to implementing the SEEA-CF

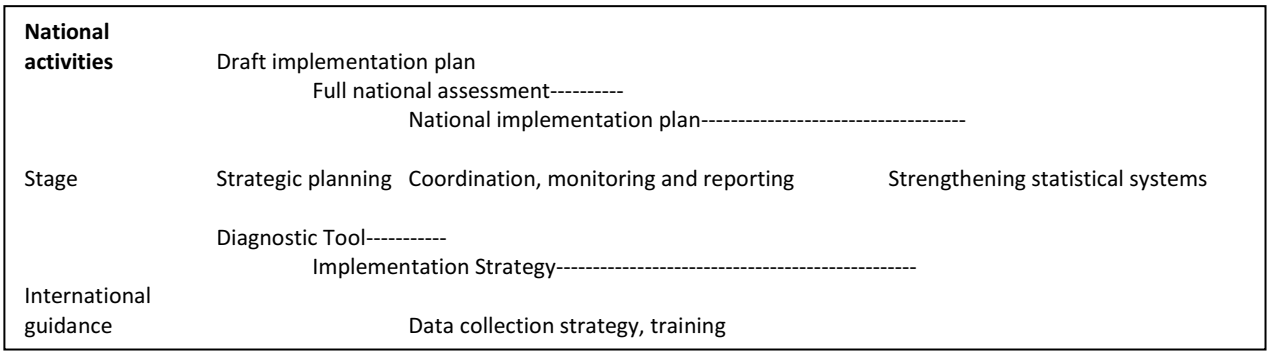
The Implementation Strategy describes a multi-year, multi-stakeholder process. Its flexible and modular approach accommodates countries with varying statistical capacities and priorities. As such, it can be followed by countries that have already implemented many or some environmental accounts as well as those that have yet to begin. The process suggested below is simply a guideline. Countries are encouraged to adapt the recommendations to their own situation.

Recommendation: Countries that have already implemented some accounts are encouraged to follow the process in the Diagnostic Tool. It will help them to promote further progress in environmental accounting in their countries.

Figure 1 shows the main steps to implementation, and how these relate to national activities and international guidance. The steps are:

1. **Strategic planning:** Building the knowledge and mechanisms for implementation.
2. **Coordination, monitoring and reporting:** Conducting a full National Assessment of data availability and statistical capacity; developing a National Implementation Plan.
3. **Strengthening statistical systems:** Working with national and international agencies to support environmental accounting through training, guidance documents, collaboration with the research community and building the community of practice through advocacy and outreach.

Figure 1 An overview of SEEA implementation (Diagram to be developed)



This **Diagnostic Tool** covers the first step: *Strategic Planning* to develop a **National Implementation Plan**. A core group can produce a draft **National Assessment** of the current policy priorities and institutional capacities and use this to produce a draft National Implementation Plan. However, conducting a full **National Assessment** and producing a final **National Implementation Plan** will require the engagement of a larger group with specific expertise and needs. Establishing this larger group will ensure collaboration and the commitment of financial and human resources.

The international community is developing additional material to provide further guidance on the second and third steps. For the second step, *Coordination, Monitoring and Reporting*, solutions and approaches will be highly country-specific. For example, data sources and the quality of the data required to complete the accounts will differ from country to country. This step results in a full National Implementation Plan.

The third step, *Strengthening Statistical Systems*, is an opportunity for countries to collaborate with national and international agencies on specific capacity building, documentation and collaboration issues required to execute and extend the National Implementation Plan. The international community will further support this step by providing training, expertise and guidance documents.

5.1 Strategic planning

Strategic planning has a number of benefits. Firstly, it is the best way to obtain political and financial support for investment in statistics. Secondly, it can be used to identify current strengths and weaknesses of statistical capacity in producing key environmental and economic indicators and basic source data. Thirdly, it can be used to lay out a schedule of tasks to remedy the weaknesses. Fourthly, it

can be used by countries to produce the information needed for monitoring their own sustainable development and green economy programmes.

5.1.1 Step 1 Getting started: Establishing the core group

The first step on a long journey is sometimes the most challenging. One person alone cannot complete the Diagnostic Tool; much less create a feasible National Implementation Plan.

Recommendation: Establish a small core group to review the Diagnostic Tool and to initiate the process of strategic planning. This group will require at least senior managers and practitioners familiar with national sustainability policies, national accounts and environment statistics. It is essential that the eventual users of the account be represented in the core group.

The core group of 4 to 6 members will be familiar with national sustainability policies, national accounts and environmental statistics. The first steps in strategic planning will work best with a mix of senior policy experts and statistical practitioners. Sustainability policy experts are sometimes found in the research and analysis sections of environment and natural resource agencies but this will differ by country. Senior practitioners in national accounts and environment statistics are often found in national statistics offices (NSOs) but this will also differ by country. What is important is that this group commits to understanding the implementation strategy, completing an initial assessment and engaging a larger group of stakeholders for the next steps.

It is suggested that the group:

1. Review this document,
2. Meet to develop a strategy for completing the Diagnostic Tool (Section 2), and
3. Consider the possibility of organizing a regional workshop with core groups from neighbouring countries and a sponsoring international agency.

The following steps are outlined in more detail in **Section 2: Preparing a strategic plan**. Section 2 can initially be completed by the core group alone. Presenting the results at a regional workshop will provide motivation to complete the assessment and to gain experience in presenting the results. Keep in mind that this is an initial screening to establish if there is commitment and potential to sustain a program over time.

5.1.2 Step 2: Reviewing the current framework for sustainable development, green economy policies and national statistical development strategies

The **SEEA Implementation Strategy** is closely linked to other international strategies for improving statistical information for policy. It is important for the core group to be familiar with not only these strategies but also to know which national agencies are concerned with their implementation:

- Paris21 NSDS and Busan Action Plan:
    - The National Strategies for the Development of Statistics (NSDS) provide guidance for developing statistical capacity across the entire National Statistical System (NSS) especially for low-income and lower middle-income countries.
    - The Busan Action Plan for Statistics is a "*global Action Plan to enhance capacity for statistics to monitor progress, evaluate impact, ensure sound, results-focused public sector management, and highlight strategic issues for policy decisions.*" (Paris21, 2011)

- SNA 2008 Implementation Programme: "*The Implementation Programme for the System of National Accounts 2008 and Supporting Statistics represents a global statistical initiative with the dual objective in assisting countries in developing the statistical and institutional capacity to*

  (a) make the conceptual change over from the 1968 or 1993 SNA to the 2008 SNA, and

  (b) improve the scope, detail and quality of the national accounts and supporting economic statistics."

- IMF quality framework (DQAF): "*Five dimensions--assurances of integrity, methodological soundness, accuracy and reliability, serviceability, and accessibility--of data quality and a set of prerequisites for data quality are the center of the IMF Data Quality Assessment Framework (DQAF). The DQAF, which is used for comprehensive assessments of countries' data quality, covers institutional environments, statistical processes, and characteristics of the statistical products.*" (IMF, 2012)

Some countries may already produce specific SEEA accounts, while others may have conducted pilot accounts or have had environment accounts in the past. Again, it is important for the core group to know which accounts have been implemented or tested and who has done this. The work may not have been conducted in the NSO; it may have been done by academic groups, NGOs or research centres.

Information to support this section may be found in country documents such as national development plans, sustainable development plans, national statistical development strategies, water resource management plans, submissions to international meetings such as Rio+20 and environment statistics reports.

Furthermore, much of the data required to complete the SEEA accounts can be derived from existing national compilations. Many of the monetary statistics such as mineral and energy prices and consumption can be derived from the SNA. Many countries have pollutant release and transfer registries (PRTRs), energy statistics and water statistics.

Recommendation: The core group should establish if the common data sources are produced in their country, who produces them (or has produced them) and the quality of the data produced.

This step includes compiling a Statistical System Information Fact Sheet, assessing which SEEA accounts are already implemented and evaluating the status of common data sources used in environmental accounting.

The fact sheet allows for collating information available at the national level and at various international organizations on the national statistical system, bringing information together relevant for the development of an environment accounting programme. A similar fact sheet will have been completed by the group implementing SNA 2008.

5.1.3 Step 3: Developing a Statement of Strategy

This is a parallel to developing a vision statement for the implementation of the SNA. The basic elements of a **Statement of Strategy** include a mandate, a mission statement, values, high-level goals, specific goals and required activities. For the purpose of an implementation plan for the SEEA, a mission statement could, for example be:

> *Our country will develop a statistics programme for compiling environmental-economic accounts with the required scope and detail to meet data needs of policy makers in a global socio-economic environment.*

The Statement of Strategy represents the overall objective for the successful implementation of the SEEA to enable the evaluation of (a) national sustainability performance and (b) progress towards national and regional sustainability policy objectives.

5.1.4 Step 4: Conducting a draft National Assessment

It is important to understand how decisions are made in your country regarding sustainable development and green economy policy. This step helps identify key stakeholders and decision-making processes by providing answers to the following questions:

- Who are the key national stakeholders?
- Are there already interdepartmental working groups, committees or other bodies mandated with making decisions or preparing evidence for sustainable development and green economy?
- Are data sharing arrangements in place that would facilitate the creation of integrated accounts?

Sustainable development and green economy policies cover a broad variety of issues and perspectives. It is important to identify current national issues and to decide on which of them are of the highest priority. The core group conducts an initial assessment that is later reviewed and validated by a larger implementation team. The priority policy issues selected will later be assessed in combination with statistical capacity and data availability to establish the core accounts for subsequent implementation.

Although the SEEA provides guidance on a large set of possible accounts, not all these accounts will be equally urgent or feasible in all countries. Countries are encouraged to select one or a few accounts that

- best address immediate national policy priorities,
- for which institutional capacity and source data already exist, and
- for which demand can be assured.

Recommendation: Select one or a small number of priority accounts for the initial implementation plan. Selecting too many may result in a burdensome and lengthy process with less chance of success.

5.1.5 Step 5: Drafting a National Implementation Plan

With an understanding of policy priorities, the range of stakeholders and the availability and quality of data, the core group can draft an initial **National Implementation Plan**. In keeping with the draft **Statement of Strategy**, it should be possible to assess which accounts are most feasible and the general steps required for implementation.

For example, data on water supply and consumption may be available but distributed across several stakeholders. The plan could then focus on:

- Engaging the stakeholders, ensuring their collaboration and agreement on sharing data,
- Adapting classifications and data, and
- Determining sources of funding to apply the adaptations and releasing the accounts.

5.2 Step 6: Establishing an implementation team

At this stage, the core group has an understanding of the requirements for a full National Implementation Plan. However, the providers of the data required for the accounts and the eventual users of the accounts need to be engaged to:

- Ensure agreement on the Statement of Strategy, assessment of policy priorities, assessment of data availability and initial assessment of priority accounts,
- Ensure their collaboration in providing the data and possibly modifying or augmenting their processes to adapt the data for the requirements of environmental accounting, and
- Obtain further detail on the data quality its fitness for use for environmental accounting.

One way of accomplishing this is to:

- Share the Diagnostic Tool and materials developed by the core group with the stakeholders. This initial assessment could be presented at national and international workshops and be made available to the public (e.g., by Internet).
- Convene a national workshop or series of meetings with stakeholders to:
    - Present and review the materials developed by the core group:
        - Statistical System Information Fact Sheet
        - Inventory of SEEA Accounts
        - Assessment of key data sources
        - Assessment of Policy Priorities
        - Assessment of Stakeholders
        - Statement of Strategy
        - Draft National Assessment (priority and feasibility of SEEA accounts)
        - Draft National Implementation Plan
    - Obtain advice on possible adjustments to the draft National Implementation Plan,
    - Institute a regular meeting schedule (at least annual, preferably sub-annual) to review progress and make adjustments,
    - Establish formal agreements to collaborate, and
    - Estimate costs of implementation and identify funding opportunities.
- Establish an Implementation Team consisting of the technical and policy experts for the selected accounts.

5.3 Step 7: Conducting a detailed National Assessment and produce a final National Implementation Plan

It is recommended that the Implementation Team revise the draft National Assessment drawing from the outcome of discussions with stakeholders and produce a final National Implementation Plan. To facilitate this, Section 3 of the Diagnostic Tool provides a framework for assessing the availability and quality of the data elements required to complete specific SEEA accounts. A detailed assessment of the availability, source, spatial and regional availability, quality, frequency, processes used, institutional arrangements, timeliness, coherence, the availability of metadata and other documentation, and storage and dissemination modes will require specific expertise.

Further steps are beyond the scope of the Diagnostic Tool and will be covered in additional supporting material. The following sections provide a brief overview.

5.4 Coordination, monitoring and reporting

This step covers the actual implementation of the programme of work. The global implementation of the SEEA-CF and supporting statistics follows three distinct stages in a multi-year programme that takes into account the different levels of statistical development: (i) Strategic Planning, (ii) Coordination, Monitoring and Reporting and (iii) Strengthening Statistical Systems.

Coordination comprises the timing and sequencing of events. Monitoring encompasses assessing the efficiency of technical assistance programmes, evaluating lessons learned, and using resources effectively. Reporting communicates progress and operational issues to interested stakeholders. Better coordination, monitoring and reporting collectively help meet national and regional goals. As well, it provides a means to evaluate international indicators against agreed benchmarks to assess the progress of expanding the scope and achieving compliance of the environmental accounts. Monitoring, reporting and evaluating can also be used to identify risks to the implementation process so that timely interventions can be made to keep plans on track.

To monitor national progress in implementation, the international community will provide internationally agreed monitoring tools for measuring (a) the scope and detail of implementation through the identification of minimum required data sets by specific SEEA modules and (b) the compliance with SEEA concepts for specific SEEA modules and (c) data quality assurance frameworks for specific SEEA modules.

5.4.1 Conducting a full national assessment, and formulating national visions and implementation plans

The guidelines for accomplishing this are included in the Diagnostic Tool. However, it is important that engagement includes not only technical and policy experts. The National Assessment, Statement of Strategy and National Implementation Plan could be the basis for a broader public consultation. Making the documents available to the public through the Internet and news media will facilitate later stages of advocacy and outreach.

5.4.2 Adapting institutions (classifications, data sources, IT infrastructure) for implementation

The first step of the **National Implementation Plan** is to facilitate the necessary adaptations to produce the selected SEEA accounts. This may be a long-term process since such adaptations could include:

- If necessary, developing legal and institutional arrangements for producing environmental accounts and related statistics,
- Establishing the nature and frequency of the accounts and related statistics to be produced,
- Establishing data sharing agreements and service level agreements between data produces and compilers of the accounts,
- Capacity building in both data producers and data users,
- Establishing or modifying data collection (surveys, registers and frames, environmental monitoring),
- Changing classification systems or creating crosswalks between existing classifications,
- Developing a **National Compilation Guide** that provides detailed instructions to compilers on the sources of data and the procedures to be used in their compilation,
- Establishing or modifying IT infrastructure to facilitate data exchange and production of the accounts,

- Determining timelines for implementation, and
- Establishing a dissemination processes.

5.4.3 Applying adaptions to production and release of accounts

The second step of the **National Implementation Plan** is to apply the adaptations to regularly produce and release the selected SEEA accounts. The adaptations will occur at different times and some will take longer than others. It is suggested that a national monitoring programme be established to assess which adaptations have been made and which remain to be completed, what the impediments are and what the expected time-frame is for completion. Reporting on this can be built into the mandate of the regular meetings of the implementation team.

5.5 Strengthening statistical systems

Once the first accounts have been produced, the challenge will be to:

- make them an ongoing process,
- sharing best practices and lessons learned,
- ensure they are being used, and
- take advantage of opportunities to implement further accounts.

This stage focuses on the longer-term strengthening of the institutional arrangements and each of the building blocks of the statistical production process (including related environmental monitoring) for the selected SEEA accounts.

Ensuring that the selected accounts are produced regularly will not only require a commitment of long-term funding but also a training and knowledge transfer program to ensure succession after staff turnover.

Promoting the use of the accounts will depend on a successful advocacy and outreach program. Potential users include not only government agencies but also the research community and the public.

Based on the experience of developing the first accounts, it may be feasible to implement additional accounts. The process recommended in the Diagnostic Tool can be revisited to establish priorities for these accounts. This can benefit from good documentation on the experience, lessons learned and best practices already established.

5.5.1 Training, guidance manuals and handbooks

Support for the implementation of the SEEA Central Framework is an ongoing priority for the international community. These training and technical cooperation programs with emphasize the integration of statistical capacity building in national planning and programming cycles to secure resources for sustainable statistical programs for environmental accounting and basic environmental statistics. Facilitating these activities at a regional level will enable regional organization and learning though sharing experiences.

However, much progress can be made as well though national and regional cooperation. Country experts and practitioners are encouraged to promote the SEEA within their communities of practice and to adapt materials to their local situations.

Further guidance from the international community is expected to include:

- A SEEA Communications Strategy

- A final SEEA CF Implementation Strategy
- A Data Collection Strategy
- SEEA (Part 2) Experimental Ecosystem Accounting
- SEEA (Part 3) Applications and Extensions

Furthermore, because of the strong linkages between the SEEA and the SNA, the revised manuals for SNA implementation will also benefit those implementing the SEEA.

5.5.2 Cooperation with the research community

The users and producers of environmental accounts can often be found in the research community. In countries that do not produce regular accounts, researchers and consultants may have produced similar analyses on an ad hoc basis. A close cooperation with the research community can therefore be a means to recruit experienced teachers, increase the scope of users and implement the environmental accounts in a broader institutional context.

The scheduled handbooks on (a) ecosystem accounting and (b) applications and extensions will also be of interest to the research community. These handbooks treat concepts that are the subject of much current research on ecosystem services, ecosystem function, spatial analysis and valuation.

Cooperation can be established in many ways. One proven method is for researchers and statistical offices to engage in joint work. This has proven to increase the level of understanding of the principles of statistical systems and the advantages of using statistical classifications in analyses related to environmental socio-economic issues.

5.5.3 Advocacy and outreach

Advocacy aims to support an ongoing dialogue among statistical produces, various levels of government, the business sector, the academic community and the public about the need for official statistics and the progress in meeting those needs. This communication can be established through targeted workshops, conferences, press releases and promotional materials that highlight the benefits of high quality official statistics and, in particular, environmental accounts. Regular engagements between the producers and users of statistics will stimulate demand, and ensure a better-funded and more effective program.

Advocacy and outreach will be supported by a forthcoming SEEA Communications Strategy. This strategy will focus on promoting information sharing with all stakeholders. It is based on the principle that high quality environmental accounts are cost-effective ways to establish sound sustainability policies.

6 Recommendations and conclusions

This section introduces a complex program with many steps. Not all countries will want or need to follow all the steps as recommended. However, the principles of engaging of a broad community, identifying priorities, assessing institutional strengths and weaknesses, and effective strategic planning will ensure the best possible outcome.

If there is substantial interest in implementing the SEEA in your country, you are welcome to contact the UNSD or the World Bank. Funding is limited but the international community is committed to facilitating implementation through regional workshops, targeted guidance manuals and expert advice. Priority will be given to countries that have already made a visible commitment to implementation. Such commitment can be shown by establishing a core group and producing a draft National Assessment and National Implementation Plan. These elements would show level and nature of support required.

7 Further information

7.1 Suggested reading and data sources

Main SEEA Web site: http://unstats.un.org/unsd/envaccounting/seea.asp

- SEEA-Central Framework (UNECE 2013 edition): http://unstats.un.org/unsd/envaccounting/seearev/Chapters/SEEA_CentralFramework_Ch1-6.pdf
- SEEA-Energy: http://unstats.un.org/unsd/envaccounting/seeaE/GC_Draft.pdf
- International Recommendations for Energy Statistics (IRES): http://unstats.un.org/unsd/statcom/doc11/BG-IRES.pdf
- SEEA-Fisheries: http://unstats.un.org/unsd/envaccounting/Fish_final_whitecover.pdf
- SEEA-Water: http://unstats.un.org/unsd/envaccounting/seeaw/seeawaterwebversion.pdf
- International Recommendations for Water Statistics (IRWS): http://unstats.un.org/unsd/envaccounting/irws/irwswebversion.pdf
- SEEA Experimental Ecosystem Accounts (SEEA-EEA): http://unstats.un.org/unsd/envaccounting/seearev/Chapters/SEEA_EEA_v1.pdf
- SEEA Applications and Extensions: http://unstats.un.org/unsd/envaccounting/seearev/Chapters/SEEA_AE_v1.pdf
- SEEA Global Assessment 2006: https://unstats.un.org/unsd/envaccounting/assessment.asp.

International Monetary Fund Data Quality Assurance Framework (DQAF): http://dsbb.imf.org/pages/dqrs/dqaf.aspx

Knowledge base on economic statistics (Environmental-Economic Accounting): http://unstats.un.org/unsd/EconStatKB/KnowledgebaseCategory168.aspx

Paris21 NSDS and the Busan Action Plan: http://www.Paris21.org

Rio+20 Synthesis report on best practices: http://www.uncsd2012.org/index.php?page=view&type=400&nr=33&menu=45

SNA 2008 Implementation Plan: http://unstats.un.org/unsd/nationalaccount/docs/guidelines.pdf

World Bank WAVES Global Partnership: http://www.wavespartnership.org/waves/

7.2 References

Edens, B., M. de Haan and S. Shenau. 2011. *Initiating a SEEA Implementation Program – A First Investigation of Possibilities*. United Nations Department of Economic and Social Affairs, Statistics Division. Sixth Meeting of the UN Committee of Experts on Environmental-Economic Accounting, New York, 15-17 June 2011. ESA/STAT/AC.238, UNCEEA/6/19. http://unstats.un.org/unsd/envaccounting/ceea/meetings/UNCEEA-6-19.pdf.

UNSD. 2006. Global Assessment of Environment Statistics and Environmental-Economic Accounting. Background document to the 38th session on the UNSC. New York. https://unstats.un.org/unsd/statcom/doc07/Analysis_SC.pdf.

Development of a Diagnostic Tool for the SEEA Central Framework

Section 2: Preparing a Strategic Plan

Draft February 15, 2013

8 Purpose and outline of Section 2

This section provides guidance on developing an initial plan for implementing the SEEA. By building the knowledge and mechanisms for implementing environmental accounting, the core group will be able to conduct an initial National Assessment. Assessments of government priorities and the strengths and weaknesses of the statistical system will be analysed to develop a National Implementation Plan that builds on those strengths and addresses the weaknesses.

The user is guided through the recommended steps of:

1. Strategic planning
    a. Step 2: Reviewing the current framework for sustainable development and green economy information, including
        i. Completing a Statistical System Information Fact Sheet
        ii. Creating an Inventory of Current SEEA Accounts
        iii. Conducting an initial Assessment of Data Sources
    b. Step 3: Developing a Statement of Strategy
    c. Step 4: Conducting an initial National Assessment of priority accounts, which includes
        i. Establishing a national institutional mechanism for implementation to drive the implementation plan
            1. Assessing policy priorities
        ii. Establishing a framework for national assessment
            1. Initial assessment of stakeholders
        iii. Conducting an initial assessment of priority and feasibility of accounts
            1. Assessing the priority of SEEA accounts
            2. Assessing the feasibility of SEEA accounts
        iv. Drafting a National Assessment Report
    d. Step 5: Drafting a National Implementation Plan
2. Step 6: Establishing an Implementation Team
3. Step 7: Conducting a detailed National Assessment and producing a final National Implementation Plan

9 Guidelines for completing Section 2

The recommended approach is to complete these steps with the core group and to review the results with a larger group of stakeholders. Stakeholders that have committed to participating in the longer-term implementation are referred to as the Implementation Team.

Translation of the key outputs of this section into local languages may be important to facilitate the engagement of stakeholders and experts.

Technical assistance may be available from the international community concerned with SEEA implementation. For example, the UNSD, UN-ECE or World Bank may be engaged to conduct a national or regional workshop or specific training activities. Specific expertise may also be available from nearby countries that have already implemented SEEA accounts.

It is suggested that the materials developed in this section be presented to national stakeholders individually or at a national workshop. At this state, all materials will be reviewed and revised into a final National Assessment and National Implementation Plan.

10 Strategic planning

This section contains guidance on compiling recommended information that will be useful in conducting an initial National Assessment of national priorities, data availability and statistical capacity to produce SEEA accounts.

10.1 Step 2: Reviewing the current framework for sustainable development and green economy information

This section guides the user in creating a Statistical System Information Fact Sheet, Inventory of Current SEEA Accounts and Initial Assessment of Data Sources.

10.1.1 The Statistical System Information Fact Sheet

This refers the user to typical institutions to consult and documents (e.g. national development plans, sustainable development plans, national statistical development strategies, water resource management plans, etc.) to review to establish how policies are prioritized and to understand existing arrangements for related statistics.

To facilitate the assessment process and the development of the statement of strategy, UNSD proposes to use a Statistical System Information Fact Sheet. The fact sheet, as presented in Table 1 allows for the compilation of information available at the national level and at various international organizations relevant for the development of an environment accounting programme. A similar fact sheet will have been completed by the group implementing SNA 2008. Much of the information could be obtained from them.

Table 1 Statistical System Information Fact Sheet

1	Statistical System Information: Country:			
		Information Source	**Name**	**Link**
2	Country	Statistical agency	Address:	
3		Legal framework	Statistical Law:	
4		Strategic framework	NSDS/Statistical Master Plan:	
5		Relevant documents	National sustainable development plan:	
6			National development plan:	
7			National environment statistics reports:	
8			National submissions to Rio+20:	
9			Resource management plans (energy, minerals, water, etc.):	
10			Others	
11		Statistical Projects / Programmes	2008 SNA Implementation stage:	
12			STATCAP (World Bank)	
13			IBRD/IDA (World Bank)	
14			TFSCB (World Bank)	
15			Others	
16		Data	Central Statistics Office website	
17		Statistical standards in use	Environment statistics framework	
18			National accounts methodology	
19			National accounts base year	
20			Balance of payments manual in use	
21			Government financing accounting concept	
22			CPI base year	
23			Others	
24	UNSD	Relevant documents	Development of National Statistical Systems	
25			MDG Report	
26			Others	
27		Data	Country profile	
28			National accounts	
29			UN-NAQ Latest submission	
30			UN-NAQ MRDS	
31			HFI Data	
32	IMF	Relevant documents	Country report	
33			DQAF/ROSC	
34			GDSS/SDDS	
35			Others	
36		Data	World economic outlook	
37	World Bank	Relevant documents	PRSP	
38			CAS	
39			Others	
40		Data	Country data	
41	Eurostat	Relevant documents	Strategy paper	
42				
43		Data		
44	Paris21	Relevant documents	NSDS	
45			Busan Action Plan	
46	UN DESA, UNCSD, UNDP	Relevant documents	Rio+20 Synthesis of National Reports for Rio+20	
47			National report to Rio+20	

Instructions by line number:

1 Insert the country name

2 Insert the mailing address, e-mail address and Web address of national statistical agency

3 Insert the legal name of the statistical law and the English translation (if available); Insert the Web address of the statistical law (in the local language and in English if available)

4 Insert the name of the strategic framework for national statistical development (NSDS or other); provide a link

5-10 Provide the name and Web addresses of relevant documents suggested. Add others if required.

11-15 Provide the names and Web addresses of statistical development projects and programmes currently active.

16 Provide the name and Web address of the Central Statistics Office.

17-23 Provide the information on the current statistical standard in use (e.g., 1993 SNA; 2003 SEEA) and links to further information.

24-47 Provide names and links to relevant country-level reports submitted to the international agencies listed.

10.1.2 Inventory of Current SEEA Accounts

Some countries may already produce specific SEEA accounts, while others may have conducted pilot accounts or have had environmental accounts in the past. It is important for the core group to know which accounts have been implemented and tested and who has done this. This work may have not been conducted by the NSO; it may have been done by academic groups, NGOs or other research centres. Information on this may be obtained from the NSO or from the relevant documents mentioned in the Statistical System Information Fact Sheet.

Annex Table A.1 provides a master list of SEEA Accounts, the topics covered and links to the detailed definitions in the SEEA documents. Table 2 records the status and assessment of SEEA accounts that have already been produced in your country.

Most of the accounts listed refer to the SEEA CF but also cover accounts in the SEEA-E and SEEA-W. In addition, four prototype accounts from the SEEA-EEA are listed. These are not considered part of the CF but they may address priority policy issues.

Table 2 Inventory of Current SEEA Accounts

	Column				
	1	*2*	*3*	*4*	*5*
SEEA Accounts	*Status*	*Frequency*	*Source*	*Spatial detail*	*Compliance*
Physical flow accounts					
Full set of supply and use tables for materials					
Economy-wide material flow accounts (MFA)					
Physical supply and use tables for water (PSUT water)					
Physical supply and use tables for energy (PSUT energy)					
Air emissions accounts					
Water emissions accounts					
Waste accounts					
Asset accounts					
Mineral and energy resources					
Land					
Soil resources					
Timber resources					
Aquatic resources					
Other biological resources					
Water resources					
Environmental activity accounts					
Environmental protection expenditure accounts (EPEA)					
Environmental goods and services sector (EGSS)					
Environmentally related payments by government					
Environmentally related payments to government					
Permits and licenses to use environmental assets					
Emissions permits					
Experimental ecosystem accounts					
Ecosystem condition and extent					
Physical flows of ecosystem services					
Carbon stock accounts					
Biodiversity accounts					

Instructions by column number:

1. **Status** specifies whether this account is:
    a. **1 = "Ongoing":** That is, data have been produced and published.
    b. **2 = "Developmental":** In the developmental stage and that completion and publication is planned.
    c. **3 = "Prototype":** This indicates that the account has been attempted but is incomplete or development has been stopped.
    d. **4 = "Discontinued":** This indicates the account has been produced in the past but is no longer produced.
    e. **5 = "Non-existent"**: The account has never been attempted.

    Sub-components of an account have been attempted or completed. For example, CO_2 emissions are a sub-component of the Air Emissions Account. In this case, specify the name of the sub-component and its status.

2. **Frequency** specifies the regularity with which the account is (or has been) produced and released. Many accounts will be "Annual". Sub-annual (such as "Quarterly") accounts may have been prototyped or accounts may be produced at "5-year intervals" or "Occasionally".

3. **Source** specifies the organization that produces the account. This will often be the NSO.
4. **Spatial detail** specifies the geographic detail for which the accounts are (or have been produced). The account may be (or have been) produced only at the national level, specific states or provinces or another sub-national region.
5. **Compliance** refers to the degree of compliance with SEEA manuals (or other international or national standard).

10.1.3 Initial Assessment of Data Sources

Annex Table A.2 provides a master list of typical data sources that can be used to produce environmental accounts. It also suggests which common data source could be used for each account. The data sources as listed may not be organized in the same way in your country. For example, estimates of CO_2 emissions may be produced by a different organizational unit from other emissions inventories. Applicable country-specific data sources should be added to the list in Table 3.

Table 3 is an initial assessment of data sources, their availability and who is responsible for maintaining them. It is also important to know whether the compilers of the accounts have access to the data and the standards used to collect and organize the data.

Some of these data sources will overlap with those in the Statistical System Information Fact Sheet. For these, it is an opportunity to provide more detail on status and accessibility.

Table 3 Initial assessment of data sources

		Column			
		1	2	3	4
Row	Data source	Status	Responsible organizations	Accessibility	Statistical standard
1	Emissions inventory (Pollutant release and transfer registry), Greenhouse gas inventory	2		1	• OECD PRTR • Industry classification • IPCC
2	Water statistics	2		2	IRWS
3	Energy statistics	2		1	IRES, IEA
4	Waste statistics	2		2	
5	Environmental statistics	3		1	• UN FDES 1982 • UN FDES 2013?
6	National accounts	1		1	• SNA 1993 • SNA 2008
7	International trade statistics	2		1	• SITC • HS
8	Business statistics	2		1	• Industry classification: (ISIC rev),
9	Government finance statistics	2		1	GFS
10	Other (e.g., administrative data, specific household or business surveys)	2		1	

Instructions by column number:

1. **Status** refers to the general existence of the data source:
    a. A rating of “1” indicates that the data source is complete and comprehensive,

   b. A rating of “2” indicates that the data source exists but may be incomplete or partial,
   c. A rating of “3” indicates that the data source does not exist or is too incomplete to use for environmental accounting.
2. **Responsible organizations** refers to the name or the department, agency or research centre that manages this data source. The data source may be divided among two or more organizations. In this case, list all the organizations and the components for which they are responsible.
3. **Accessibility** refers to the level of access that the compilers of the environmental accounts can expect:
   a. A rating of “1” indicates that the data are readily available. Either they are published in detail or data sharing agreements are in place.
   b. A rating of “2” indicates that summary data may be published or available but that the compilers of the environmental accounts do not have access to detailed data or significant components.
   c. A rating of “3” indicates that neither summaries nor detailed data are currently accessible by the compilers of the environmental accounts.
4. **Statistical standards** indicates the international standard to which the data sources adhere. Some examples are given.

Instructions by row number:

1. **Emissions inventories** are estimates of residuals released to air, water and land from specific human activities. The list of residuals covered will vary by country. One international guideline is the OECD Pollutant Release and Transfer Registry. (link) Hazardous wastes are generally recorded in separate inventories.
2. **Water statistics** would ideally include a comprehensive measure of stock, supply and flows of freshwater.
3. **Energy statistics** would also include a comprehensive and coherent accounting for national energy supply and use by economic sector.
4. **Waste statistics** would include an accounting of waste generation and disposition (recycling, disposal, landfilling, etc.) of non-hazardous wastes.
5. **Environmental statistics** is a general term for data integrated from other sources to provide summary tables or indicators of specific aspects of the environment. These are sometimes compiled into a comprehensive national document.
6. **National accounts** are the compilation of macro-economic statistics into high-level indicators to track national production and wealth. Components of the national accounts may be produced in different national organizations but one group will be responsible for the integration of the information to produce estimates of GDP.
7. **International trade statistics** are used to identify the physical flows of goods (such as fuels, minerals and forestry products) between countries.
8. **Business statistics** are a source of information on industrial consumption as well as expenditures on environmental protection.
9. **Government finance statistics** can be used to better assess the payments to and from government (taxes and subsidies) for environmental purposes.
10. **Other.** This category is an opportunity to list other national sources of relevant statistics that are not detailed in this list. These sources, such as administrative data or specific surveys, should demonstrably contribute to the compilation of a specific SEEA account. For example, Canada

conducts surveys of the Waste Management Industry. This could contribute to both the waste account (quantities) and business statistics (expenditures).

10.2 Step 3: Developing a Statement of Strategy

This will lead the user through the steps of developing a draft Statement of Strategy for implementing environmental accounts. This has been adapted to align with the process recommended for the SNA 2008 Implementation Strategy. As with the Statistical System Information Fact Sheet, it may be useful to align SEEA implementation with this process.

Table 4 Prototype Statement of Strategy

<table>
<tr><th>Line</th><th colspan="3">Mandate</th></tr>
<tr><td>1</td><td>Policy needs
Regional and national policy objectives for sustainable development and green economy.</td><td>Legal mandate
• Statistics Act
• Environmental Protection Act
• Fisheries Act, (others)</td><td>International Standards
• System of environmental-economic accounting (SEEA);
• UN Fundamental Principles of Official Statistics;
• Data Quality Assessment Framework (DQAF);
• 2008 SNA, BMP6, GFSM, ISIC Rev.4</td></tr>
<tr><td>2</td><td colspan="3">Mission statement
The efficient and timely dissemination of high quality environment accounts, and supporting environment and resource statistics.</td></tr>
<tr><td>3</td><td colspan="3">Values
• Statistical professionalism
• Independence and integrity
• Excellent service to our customers
• Respect and understanding for our data suppliers
• Value for money</td></tr>
<tr><td>4</td><td colspan="3">High-level goals
• Improvement in the scope, quality and timeliness of environment and resource statistics
• Minimising the burden on respondents
• Increasing the use of administrative and regulatory data for statistical purposes
• Achieving greater efficiencies using best practices
• Raising public awareness and use of environment accounts</td></tr>
<tr><td>5</td><td colspan="3">Specific goals
• Adoption of SEEA and related internationally agreed standards for environmental accounting and statistics
• Develop a national central data hub for short term environment and resource statistics to facilitate the early detection of changes in natural resource stocks and flows,</td></tr>
<tr><td rowspan="2">6</td><td colspan="3">Required activities</td></tr>
<tr><td colspan="2">Modernisation of the national regulatory and institutional framework by strengthening
• Strengthening the functioning of the national statistical system, its programming, management and performance
The upgrading of statistical infrastructure</td><td>The upgrading or development of statistical operations
• Surveys of water consumption
• Surveys of environmental protection expenditures
• Surveys of the environmental goods and services sector
• Surveys of household environmental activities (energy and water consumption, recycling, etc.)
• Surveys of waste production and management</td></tr>
</table>

	• SEEA compliance • Strengthening the use of standard classifications, registers and frames	• Linkages to water and air emissions • Administrative data

Instructions by line number:

1. The **Mandate** for SEEA implementation is driven by national policy needs, the legal mandate for collecting environmental information and the international standards guiding the implementation. The items provided may be customized or new ones may be added depending on your national situation.
2. The **Mission Statement** should describe the high-level vision for what needs to be accomplished for overall implementation. It describes the purpose, users, outputs, markets, philosophy and basic technology used to realize the strategy.
3. The **Values** need to reflect the values and principles portrayed by the UN Fundamental Principles of Official Statistics to produce useful high-quality data that will have the confidence of users of statistics.
4. **High-level goals** represent the overall accomplishments to be achieved. These goals aim to address important issues, which are identified during the assessment phase. The goals should be creative and forward-looking by being specific, measurable, relevant and time-bound.
5. The **Specific Goals** describe the ultimate results that need to be accomplished for fulfilling the vision described in the statement of strategy.
6. To reach the specific goals require specific activities. To determine these **Required Activities** an initial assessment of the national statistical system needs to be carried out to determine the adequacy of the national statistical production process to support implementation of the SEEA. The activities listed in the prototype Statement of Strategy should be revised when the draft National Assessment has been completed.

10.3 Step 4: Conducting an initial National Assessment

10.3.1 Establishing a national institutional mechanism to drive the implementation plan

This step is an initial assessment of policy issues addressable through environmental accounting and the relevant stakeholders. The issues divided into the four quadrants (described in Section 1, Subsection 3) linking SEEA to policies for sustainable development and green economy.

The Annex Table A.3 provides a master list to choose from or add to as needed. Table 5 below provides a structure to assess these policies in terms of priority and geographic scope. The responsible institution and specific SEEA account that addresses this issue are also identified.

Table 5 Assessment of national policy priorities

SEEA and sustainable development policy quadrant	Column 1 Issue (select from master list)	2 Priority (1=highest, 5=lowest)	3 Scope (national or specific region)	4 Name of policy or program	5 Decision making body	6 SEEA account(s) required
1. Improving access to services and resources						
2. Managing supply and demand						
3. Improving the state of the environment and reducing impacts						
4. Mitigating risks and adapting to extreme events						

Instructions by column number:

1. **Issue:** Select the general sustainable development or green economy policy issue from the master list in Annex Table A.3. For example, the issue within Quadrant 1: Improving Access to Services and Resources may be the Costs of Provisioning Services such as water or energy. Issues not listed in the master list may be added.
2. **Priority:** Assess the relative priority of this issue:
    a. A rating of "1" indicates the highest priority issues. These may be mentioned in sustainable development plans or other national documents listed in the Statistical Information Fact Sheet.
    b. A rating of "2" represents regional or new issues that may have not been highlighted in national documents but for which there is substantial interest.
    c. A rating of "3" represents regional or new issues for which there is some interest in pursuing that may not yet have been demonstrated across the government. For example, one agency or interest group may be advocating greater attention to an issue at this level.
    d. A rating of "4" represents issues that may have been investigated in the past but for which relevance or priority has not been demonstrated.
    e. A rating of "5" represents issues that are not currently applicable.
3. **Scope:** The issue identified may be national in scope (such as the supply and price of energy) or apply only to a sub-region of the country. For example, water supply may be an issue in parts of the country. If the issue is national in scope, identify it as "National". If it is regional, specify the region or regions for which it is important.
4. **Name of policy or program:** If there is already a specific policy (legislation, regulation, tax or other initiative) covering this issue, such as a national environmental protection policy or strategy, record its name here.
5. **Decision making body:** This reflects how decisions are made for that issue. The policy or program may be the main responsibility of one department but be monitored and implemented by an interdepartmental working group or other organization. Record the name of the department or other decision making body here.

6. **SEEA account:** The master list in Annex Table 1 suggests SEEA accounts that can address specific policy issues. Transfer the names of the SEEA accounts corresponding to the selected issue.

This table, when completed will be useful as an overview of priorities when presenting to national or international groups.

10.3.2 Establishing a framework for national assessment

This section is an initial assessment of stakeholders including their statistical capacity, data sharing arrangements, data security and other arrangements required to produce and use environmental accounts. Stakeholders will be classified as producers or users (or both) of environmental data.

Annex Table A.4 provides a master list of stakeholders. The actual names and mandates of stakeholders will be country-specific and this list should be adapted to your national situation. Table 6 provides the structure to assess each relevant stakeholder.

Table 6 Initial assessment of stakeholders

	Column					
	1	2	3	4	5	6
Stakeholder category	Stakeholder	Producer or user	Data sources	Statistical capacity	Data sharing	Data security and IT
Central government agencies	National Statistics Office					
	Central Bank					
Human, industry and economic government agencies						
Environment and natural resource government agencies	Environment					
	Water					
	Energy					
	Minerals					
Universities (specify institute or centre)	University centre 1					
	University centre 2					
NGOs and private industry associations	Industry associations					
	National environmental NGOs					
	International NGO					

Instructions by column number:

1. **Stakeholder:** Insert the official name of the stakeholder in local language and English translation, if available. This should include all departments and other decision-making bodies mentioned in Table 3 (Initial assessment of data sources) and Table 5 (National policy priorities).
2. **Producer or user:** Specify if the stakeholder is a data "Producer", "User" or "Both".
3. **Data sources:** This lists the common data sources for which the stakeholder is responsible (if a producer of statistics). This should be consistent with Table 3 (Initial assessment of data sources).
4. **Statistical capacity:** This rates the capacity of the stakeholder to produce and release relevant statistics:

a. A rating of “1” specifies that the stakeholder produces statistics according to current international standards, adheres to national statistical legislation (for confidentiality and quality) and releases the statistics at regular and pre-announced times.
b. A rating of “2” indicates that the stakeholder produces statistics but lacks one or two of the criteria of international compliance, national compliance and regular releases.
c. A rating of “3” indicates that the stakeholder produces statistics but lacks all the criteria of international compliance, national compliance and regular releases.

5. **Data sharing:**
    a. If data sharing arrangements are in place with the National Statistics Office (or other organization compiling the SEEA accounts, specify “1”. These arrangements may include an MOU with service level agreements.
    b. Specify “2” if no data sharing agreements are in place.
6. **Data security and IT (Information Technology):** This rates the strength of existing data security arrangements of the stakeholder. This covers not only unauthorized access but also to arrangements in place to ensure the integrity, availability and authenticity of the data within the organization. Plans may include Business Continuity Planning and Disaster Recovery Planning:
    a. A rating of “1” indicates that the stakeholder applies sufficient data security procedures and its IT infrastructure is compatible with the NSO.
    b. A rating of “2” indicates that the stakeholder applies sufficient data security procedures but that its IT infrastructure is incompatible with the NSO.
    c. A rating of “3” indicates that the stakeholder does not apply sufficient data security procedures and that its IT infrastructure is incompatible with the NSO.

10.3.3 Initial assessment of priority and feasibility of accounts

10.3.3.1 Assessing priority

This section guides the user through assessing the priority of all potential SEEA accounts and feasibility of accounts selected as high priority.

Table 7 brings together information on the status of SEEA accounts and policy priorities. Using this table, you can calculate a priority score that will help select which accounts are the most important. Note that if accounts are already produced, they will likely rate as a high priority. This is valuable since further steps will review the feasibility and the barriers to implementation and use of the accounts.

Table 7 Priority SEEA accounts (example)

	Column			
	1	***2***	***3***	***4***
SEEA Accounts	***Status***	***Highest policy priority addressed***	***Calculated score (lower number is highest priority)***	***Selected***
Physical flow accounts				
Full set of supply and use tables for materials	5	2	10	
Economy-wide material flow accounts (MFA)	3	2	6	
Physical supply and use tables for water (PSUT water)	1	2	2	Yes
Physical supply and use tables for energy (PSUT energy)	1	2	2	Yes
Air emissions accounts	2	2	4	Yes
Water emissions accounts	5	3	15	
Waste accounts	2	3	6	
Asset accounts				
Mineral and energy resources	1	2	2	Yes
Land	2	2	4	Yes
Soil resources	3	3	9	
Timber resources	2	3	6	
Aquatic resources	3	3	9	
Other biological resources	3	3	9	
Water resources	3	2	6	
Monetary flow accounts				
Environmental protection expenditure accounts (EPEA)	2	2	4	Yes
Resource use and management accounts (RUMEA)	3	2	6	
Environmental goods and services sector (EGSS)	1	3	3	Yes
Environmentally related payments by government	2	2	4	Yes
Environmentally related payments to government	3	3	9	
Permits and licenses to use environmental assets	3	3	9	
Emissions permits	3	3	9	
Costs related to termination of fixed assets	4	4		
Experimental, extensions and applications				
Ecosystem condition and extent	3	2	6	
Physical flows of ecosystem services	3	2	6	
Carbon stocks	3	2	6	
Biodiversity	3	1	3	Yes

Instructions by column:

1. **Status:** Transcribe the **Status** rating for each account from Table 2.
2. **Highest policy priority addressed:** From Table 5, select highest priority rating (Column 2) corresponding to this account (Column 6).
3. **Calculated score:** Multiply Column 1 by Column 2.
4. **Selected:** Indicates "Yes" if the result in Column 3 is 5 or lower.

Depending on the status of the accounts and issues addressed, the list of selected accounts may be short or long. The Criteria for selection may be adjusted up or down to manage the size of this list. For example, it too many accounts are identified, the number can be reduced by selecting only accounts with a Calculated Score of less than 4 or 3.

10.3.3.2 Assessing feasibility

Based on the accounts selected in Table 7, Table 8 brings together the information to assess the feasibility of implementing and using those accounts. Feasibility refers not only to the appropriateness

and quality of the source data but also to the readiness of stakeholders to provide necessary data or to use the results. This table could be completed for all accounts or for the accounts selected as highest priority in Table 7.

Table 8 Feasibility assessment (example)

	1	*2*	*3*	*4*	*5*	*6*
	Data source accessible	***Data source quality and standards***	***Stakeholder (providers) participating***	***Stakeholder (users) participating***	***Capacity***	***Calculated feasibility***
Physical flow accounts						
Physical supply and use tables for water (PSUT water)						
Physical supply and use tables for energy (PSUT energy)						
Air emissions accounts						
Asset accounts						
Mineral and energy resources						
Land						
Monetary flow accounts						
Environmental protection expenditure accounts (EPEA)						
Environmental goods and services sector (EGSS)						
Environmentally related payments by government						
Experimental, extensions and applications						
Biodiversity						

Instructions by column number:

1. **Data source available:** This is the average rating of the availability rating for the required data sources from Table 3, Column 3.
2. **Data quality and standards:** This is the average rating of the status of the data sources from Table 3, Column 1.
3. **Stakeholder (providers) participating:** This is the average rating of stakeholders (who are data providers) relevant to this account. This can be calculated from the data sharing assessment (column 5) from Table 6.
4. **Stakeholder (users) participating:** This is the average rating of stakeholders (who are data users) relevant to this account. This can be calculated from the data sharing assessment (column 5) from Table 6.
5. **Capacity:** This is the average capacity of stakeholders (providers and users) taken from Column 4 in Table 6. Note that this includes the NSO.
6. **Calculated feasibility score:** This is a synthesis of the scores in columns 1-5:
    a. **Testing:** If the scores in columns 1-5 are all high (e.g., 2 or higher), the account may be feasible for testing.
    b. **Capacity building:** If the scores for data accessibility (Column 1) and data quality (Column 2) are high, and stakeholders are participating, (ratings in Columns 3 and 4 are high) but capacity is low, this account may be a candidate for capacity building.

c. **Data development:** If the scores for data accessibility (Column 1) and data quality (Column 2) are low, but stakeholders are participating, (ratings in Columns 3 and 4 are high) and capacity is high, this account may be a candidate for data development.
d. **Strengthening institutions:** If the scores for data accessibility (Column 1) and data quality (Column 2) are high, but stakeholders are not participating, (ratings in Columns 3 or 4 are low) and capacity is high, this account may be a candidate for strengthening institutions.

10.3.4 Drafting an initial National Assessment Report

A Draft National Assessment Report presents the steps taken above to assess the priority and feasibility of accounts. A stand-alone Draft National Assessment Report may be based on the following table of contents:

1. National sustainability and green economy overview
2. Policy applications of environmental and the role of SEEA (Derived from Section 1)
    a. SEEA principles and components (Derived from Section 1)
    b. Steps to SEEA Implementation (Derived from Section 1)
3. Results of the initial SEEA Diagnostic
    a. Statistical system information fact sheet
    b. Inventory of SEEA accounts
    c. Assessment of key data sources
    d. Statement of strategy
    e. Assessment of national policy priorities
    f. Assessment of stakeholders
    g. Priority SEEA accounts
    h. Feasibility assessment
4. Draft national implementation plan (see next section)
5. Next steps
    a. Meeting with stakeholders and experts
    b. Reviewing and revising materials in initial SEEA diagnostic
    c. Establishing an implementation team
    d. Determining specific goals, required activities, costs and sources of funding

10.4 Step 5: Drafting a National Implementation Plan

For the draft National Implementation Plan, it is important to understand the current barriers to developing and regularly producing environmental accounts. The main objective is to identify the general steps required to develop and implement the selected accounts. This will differ by country and by account.

10.4.1 The experience of other countries

Understanding the challenges faced by other countries in environmental accounting may provide some guidance on the possible priorities for specific actives in your National Implementation Plan.

The UNSD conducted a Global Assessment of Environment Statistics and Environmental-Economic Accounting in 2006. The following barriers to developing environmental accounting programmes were identified. Percentages refer to countries with environmental accounts (n=42) or planning to implement environmental accounts in the near future (n=20).

1. Lack of human resources (69%)
2. Lack of financial resources (62%)
3. Availability of data (61%)
4. Quality of data (52%)
5. Lack of institutional set-up/coordination (39%)
6. Lack of interest by the users (34%)
7. Lack of access to training materials (31%)
8. Other (18%)

The Global Assessment also identified a separate set of factors impeding the compilation of environment accounts for countries with environment accounts programmes (n=42):

1. Availability of data (88%)
2. Quality of data (64%)
3. Lack of human resources (62%)
4. Lack of financial resources (55%)
5. Lack of institutional set-up/coordination (29%)
6. Lack of interest by the users (26%)
7. Lack of access to training materials (21%)
8. Others (14%)

The results suggest that resource limitations are the most important barriers to overcome in the initial stages of development. However, once a programme has been initiated and accounts have been produced, factors of data availability and quality take precedence. Institutional coordination and the lack of interest by users are substantial barriers at both stages. By addressing all these factors at an early state of strategic planning will ensure that the implementation and eventual ongoing production of environmental accounts will be as free as possible from these limiting factors.

10.4.2 General steps

At this stage, the draft National Implementation Plan consists of the general steps, based on the draft National Assessment that need to be taken to implement the priority SEEA accounts. For example, if accounts are already feasible for **testing** (based on Table 8 Feasibility assessment), then the implementation plan may focus on the steps necessary to ensure that the resources and coordination mechanisms are in place for testing, such as:

1. Establish an Implementation Team
2. Determine costs and secure funding
3. Produce selected accounts
4. Evaluate accounts (best practices and lessons learned)
5. Release accounts
6. Apply the best practices and lessons learned to further SEEA accounts through training and guidance manuals and cooperation with the research community
7. Initiate advocacy and outreach to ensure the accounts are used

If no accounts are feasible for testing but some are feasible for **capacity building**, then the steps may be different:

1. Establish an Implementation Team
2. Determine which institutions require capacity building, the nature of the capacity that requires improvement (statistical standards, accounting concepts, concepts and methods, interpreting

data, analysis, etc.) and the best methods of providing support (workshops, training programmes, manuals, collaborations, etc.)
3. Determine costs and secure funding
4. Determine and apply the necessary adaptations (e.g., establish a training program on SEEA concepts and methods, produce a manual on statistical standards)
5. Apply the adaptations to produce the accounts
6. Evaluate the accounts
7. Apply the best practices and lessons learned to further SEEA accounts through training and guidance manuals and cooperation with the research community
8. Initiate advocacy and outreach to ensure the accounts are used

If no accounts are feasible for testing but some are feasible for **data development**, then the steps may be different:

1. Establish an Implementation Team
2. Determine which data sources need to be established or improved
3. Determine and apply the necessary adaptations (e.g., establish an emissions inventory according to international standards, create bridging tables between energy supply and use statistics, …)
4. Determine costs and secure funding
5. Apply the adaptations to produce the accounts
6. Evaluate the accounts
7. Apply the best practices and lessons learned to further SEEA accounts through training and guidance manuals and cooperation with the research community
8. Initiate advocacy and outreach to ensure the accounts are used

For accounts that are feasible for **strengthening institutions** the steps may be in a different order:

1. Engage key stakeholders to better understand their needs and to explain the benefits of environment accounts (e.g., show how their mandate has been addressed by environmental accounting in other countries, review the results of the initial diagnostic and determine the barriers to their participation or their potential use of accounts)
2. Revise the implementation plan to address specific barriers to participation for specific stakeholders (e.g., training in concepts and methods)
3. Establish an Implementation Team including the stakeholders
4. Determine costs and secure funding
5. Apply the adaptations to produce the accounts
6. Evaluate the accounts
7. Apply the best practices and lessons learned to further SEEA accounts through training and guidance manuals and cooperation with the research community
8. Initiate advocacy and outreach to ensure the accounts are used

Specific required activities are determined after consultation with stakeholders and a detailed data assessment conducted in the next section.

11 Step 6: Establishing an Implementation Team

This step is already described in Section 1. To revise and obtain agreement on the initial National Assessment and draft National Implementation Plan, ideally all the stakeholders implied in producing or using relevant information are engaged through a national workshop or other high-level meeting. At such a workshop, materials developed in the Diagnostic Tool are presented, discussed and revised.

Furthermore, such a workshop would be an opportunity to discuss next steps, establish plans for formal agreements to collaborate, establish costs and sources of funding and to identify experts to participate in the Implementation Team.

12 Next steps

12.1 Step 7: Conduct a detailed National Assessment and produce a final National Implementation Plan

Based on advice from a broader community of stakeholders, the Implementation Team will review and revise the initial National Assessment and draft National Implementation Plan.

12.1.1 Detailed data assessment

Detailed data assessment is provided in Section 3. This provides a framework for assessing the availability and quality of the specific data elements required to produce specific SEEA accounts. The experts on the Implementation Team will conduct a detailed assessment of the source, spatial and regional availability, quality, frequency, processes used, institutional arrangements, timeliness, coherence, the availability of metadata and other documentation, and storage of each data element.

12.1.2 National implementation plan

This is a plan to guide the adaptation of institutions to implement the SEEA and the application of those adaptations to produce and release the priority accounts.

It would be based a more detailed description of required activities based on the National Assessment and detailed Data Assessment (Section 3).

Specific required activities would be derived from discussions with stakeholders. This would entail adding more detail to the general steps outlined in the previous section. Solutions will be highly country-specific and successful implementation will depend on sharing best practices and lessons learned with stakeholders, nearby regional environmental accounting groups and the international community.

Following are some examples that illustrate the level of detail and specificity that will ensure that the activities are well defined and achievable. It is possible that capacity building, data development and strengthening institutions will be required before testing the accounts is possible. In this case, the required activities will include elements of two or more of the groups of activities:

1. Testing accounts
    a. Institute a Director-level committee between the NSO, environment department, finance department and other relevant stakeholders to guide and monitor the implementation of a prototype account for xxx.
    b. Secure funding of $xxx to produce a prototype account for xxx over 2 years.
    c. Establish a team of xxx statistical and subject-matter experts to produce a prototype account for xxx over 2 years.
2. Accounts requiring capacity building
    a. Establish an ongoing training programme in international statistical standards (SNA, SEEA, DQAF) and fundamental principles of official statistics.
    b. Produce summaries of the key international documents in the local language.
    c. Secure funding of $xxx to engage national and international experts in contributing to training

3. Accounts requiring data development
    a. Establish funding and a working group between the NSO, environment and natural resource departments to develop bridging tables between energy supply and use statistics and the economic models used to estimate impacts of energy consumption.
    b. Revise the classifications used in the national emissions inventory to be compatible with international classifications (ISIC) and concepts.
    c. Initiate a survey of environmental protection expenditures in business. Review government finance statistics to determine if these are sufficient to develop estimates of government expenditures on environmental protection. If necessary, initiate specific surveys (e.g., waste management) to collect missing information.
4. Accounts requiring strengthening institutions
    a. Revision the information requirements of key agencies making decisions on sustainability and green economy,
    b. Develop and present materials on how those information requirements are met using environmental accounts in other countries,
    c. Determine and address the main barriers to participation (funding, capacity, time-frames, etc.)

Links to Communications Strategy, Data Collection Strategy…

References?

13 Annex 1 Supplementary tables

Table A.1 List of general SEEA accounts

SEEA Accounts	*Topics covered (detailed definition)*
Physical flow accounts	
Full set of supply and use tables for materials	All resources and materials (energy, water, air emissions, water emissions, solid waste) (CF 3.45)
Economy-wide material flow accounts (MFA)	Supply and consumption of energy; air emissions, water emissions, and solid waste (CF 3.279)
Physical supply and use tables for water (PSUT water)	Supply (precipitation) and consumption of water (CF 3.186)
Physical supply and use tables for energy (PSUT energy)	Supply and consumption of energy (CF 3.140)
Air emissions accounts	Air emissions (CO_2, pollutants) (CF 3.233)
Water emissions accounts	Water emissions (CF 3.257)
Waste accounts	Solid wastes (CF 3.268)
Asset accounts	
Mineral and energy resources	Physical and monetary accounts for minerals and energy stocks (oil, natural gas, coal and peat, non-metallic minerals and metallic minerals) (CF 5.172)
Land	Physical and monetary accounts for land, land cover, land use (CF 5.235)
Soil resources	Area and volume of soil resources (CF 5.318)
Timber resources	Physical and monetary accounts for timber resources (CF 5.343)
Aquatic resources	Physical and monetary accounts for fish, crustaceans, molluscs, shellfish and other aquatic organisms such as sponges and seaweed as well as aquatic mammals such as whales. (CF 5.393)
Other biological resources	Cultivated animals and plants including livestock, annual crops such as wheat and rice, and perennial crops such as rubber plantations, orchards and vineyards. (CF 5.462)
Water resources	Stock of water resources (CF 5.471)
Monetary flow accounts	
Environmental protection expenditure accounts (EPEA)	Output of EP services in economy and expenditures on EP goods and services by resident units (CF 4.45)
Resource use and management accounts (RUMEA)	Production, supply and use, expenditures on and financing of resource management (CF 4.121)
Environmental goods and services sector (EGSS)	Characteristics of all producers of products intended for environmental protection and resource management (CF 4.95)
Environmentally related payments by government	Environmental subsidies, social benefits to households, investment grants and other current and capital expenditures (CF 4.138)
Environmentally related payments to government	Environmental taxes (taxes on products, production and income; other current taxes and capital taxes) and other payments to government (rent, sales of some goods and services, some fines and penalties) (CF 4.149, CF 4.159)
Permits and licenses to use environmental assets	Permits to extract and harvest natural resources (CF 4.174)
Emissions permits	Permits for the use of the environment as a pollution sink (emissions permits) (CF 4.182)
Costs related to termination of fixed assets	Environmental consequences of disposing of fixed assets (nuclear power plants, oil rigs and other equipment, landfills, mines, etc.) (CF 4.194)
Experimental, extensions and applications	
Ecosystem condition and extent	Characteristics of ecosystem condition and ecosystem extent (EEA 40, EEA 88, EEA 89)
Physical flows of ecosystem services	Ecosystem services by ecosystem type (EEA 39, EEA 41, EEA 60, EEA 90)
Carbon stocks	All carbon stocks, additions and reductions (EEA 95)
Biodiversity	Species abundance (EEA 102); Threatened species (EEA 111)

CF = Central Framework, white cover edition, refers to paragraph number; EEA = Experimental Ecosystem Accounting.

Table A.2 Common national data sources and links to SEEA accounts

Data source	SEEA Account
Emissions inventory (Pollutant release and transfer registry)	• Air emissions • Water emissions
Water statistics	• Water emissions • Water flow • Water stock
Energy statistics	• Air emissions • Energy and material flow
Waste statistics	• Waste accounts
Environmental statistics	• Land cover • Forest
National accounts	• Energy and material flow • Mineral and energy assets • Environmental protection expenditures • Environmental taxes and subsidies • Environmental goods and services sector
International trade statistics	• Energy and material flow
Business statistics	• Environmental protection expenditures • Environmental goods and services sector
Government finance statistics	• Environmental protection expenditures • Environmental taxes and subsidies
Other (e.g., administrative data)	• Mineral and energy assets

Table A.3 Master list of sustainable development and green economy policy issues

SEEA and sustainable development policy quadrant	Issue sub-category	Issue detail	Account[1]
1. Improving access to services and resources	Costs of provisioning of services		Water flow, Energy flow
	Equity of natural resource exploitation		MEFA
	Losses in distribution (water, energy, food)		MEFA
	Quantity of resources used		Mineral and energy asset accounts, Land, EEA
	Sustainability of resource exploitation		Mineral and energy asset accounts, Land, EEA
	Tourism		Land, EEA
2. Managing supply and demand	Carbon and energy embedded in products		MEFA
	Coordinating land use (e.g., watershed) and activities		Land, EEA
	Decoupling indicators of emissions and resource use		Air emissions, Water accounts
	Energy supply and demand		Energy, MEFA
	Environmental goods and services sector		EGSS
	Environmentally-adjusted aggregates for depletion		Mineral and energy asset accounts, Land, EEA
	Fish stock		EEA
	Food supply		EEA
	Forest stock and use; Deforestation		Forest/Timber
	Generation of emissions and wastes		MEFA
	Green jobs		EGSS
	Investment in infrastructure		EPEA
	Natural wealth and changes in natural capital		Mineral and energy asset accounts, Land, EEA
	Resource efficiency (e.g., resource productivity)		Mineral and energy asset accounts, Land, EEA
	Resource rent		Mineral and energy asset accounts, Land, EEA
	Resource use of production and consumption		MEFA
	Sustainability of production and consumption		Land, EEA
	Sustainable agriculture		Land, EEA
	Sustainable economic development		MEFA
	Water supply and demand		Water stock

SEEA and sustainable development policy quadrant	Issue sub-category	Issue detail	Account[1]
3. Improving the state of the environment and reducing impacts	Air quality: emissions and treatment		Air emissions
	Ecosystems and biodiversity	Coastal ecosystems	Land, EEA
		Ecosystem health and condition	Land, EEA
		Ecosystem services	Land, EEA
		Forests	Land, EEA
		Freshwater (lakes, rivers, streams, groundwater)	Land, EEA
		Other ecosystems (tundra, grasslands, mangrove, desert, etc.)	Land, EEA
		Wetlands	Land, EEA
	Endangered species		Land, EEA
	Environmental impact of exploitation		All
	Environmental protection expenditures and resource management		EPEA
	Land use and land cover		Land, EEA
	Nature and recreation		Land, EEA
	Protected areas		Land, EEA
	Sea level rise		Land, EEA
	Solid waste and treatment		Waste
	Stock of natural resources		Mineral and energy asset accounts, Land, EEA
	Water quality: effluents and treatment		Water flow, Energy flow
4. Mitigating risks and adapting to extreme events	Adaptation to climate change and extreme events		EPEA, EGSS
	Capacity and capacity building		Diagnostic
	Compensation for environmental damages		Environmental taxes and subsidies, EEA
	Contaminated land (e.g., brownfields)		Land, EEA
	Coordination of sustainability policies		Diagnostic
	Education and awareness		Diagnostic
	Effectiveness of policy instruments		All
	Environmental research		Diagnostic
	Expenditures on mitigation (e.g., technologies)		EPEA
	Extreme events: floods, landslides, heat waves, droughts, etc.		EPEA
	Greenhouse gas emissions		MEFA
	Investment and incentive infrastructure		Diagnostic
	Legislative and regulatory infrastructure		Diagnostic
	Progress of societies		All
	Residuals in food		MEFA
	Urbanization and urban planning		Land, EEA

Notes:

1. Accounts acronyms are:
   - EEA – Experimental Ecosystem Accounts
   - EGSS – Environmental Goods and Services Sector statistics
   - EPEA - Environmental protection expenditure accounts
   - MEFA – Materials and Energy Flow Accounts

"Diagnostic" refers to issues of implementation to be reviewed as part of the diagnostic process.

"All" suggests that most or all SEEA accounts would be required for a comprehensive assessment of this issue.

Table A.4 Master list of potential stakeholders

Stakeholder category	Stakeholder
Central government agencies	Central banks
	Central planning
	Finance
	Government operations
	Infrastructure
	National Statistical Office
Human, industry and economic government agencies	Census
	Culture
	Economic Analysis
	Health, disease control, research
	Housing
	Industry
	Justice, Crime prevention
	Labour, Human resources
	Transport
Environment and natural resource government agencies	Agriculture
	Chemicals regulation
	Energy
	Environment
	Fisheries
	Forestry
	Geology, Geomatics
	Geomatics
	Meteorology and hydrology
	Museum of natural history
	Natural Resources
	Parks
	Water (supply)
	Water (treatment and sewage)
Universities (specify institute or centre)	University 1
	University 2
NGOs and private industry associations	Industry associations
	Agriculture associations
	Energy, petroleum
	Forest industry
	Manufacturers, plastics, chemicals
	Parks associations
	Waste management, recycling, packaging
	Water (supply)
	Water (treatment and sewage)
	National environmental NGOs
	NGO 1
	NGO 2
	International economic and environmental NGOs
	INGO 1
	INGO 2